

WHAT IS CLAIMED IS:

1. A protein microarray comprising at least a portion of at least two of the following proteins selected from the group consisting of L35 protein, eukaryotic translation elongation factor 1  $\alpha$ -2; NADH dehydrogenase 3 (complex I), 24-kDa subunit of complex I, mitotic kinesin-like protein-1, thromboxane synthase, and uncoupling protein homolog.
2. A protein microarray comprising at least a portion of at least four of the proteins of claim 1.
3. A protein microarray comprising at least a portion of all of the proteins of claim 1.
4. The protein microarray of claim 1 wherein the proteins are His-tagged.
5. The protein microarray of claim 1, wherein the proteins are printed on a charged nickel slide.
6. The protein microarray of claim 1, wherein the L35 protein is represented by a sequence which comprises the sequence shown in SEQ ID NO: 2.
7. The protein microarray of claim 1, wherein the eukaryotic translation elongation factor 1  $\alpha$ -2 is represented by a sequence which comprises the sequence shown in SEQ ID NO: 4.
8. The protein microarray of claim 1, wherein the NADH dehydrogenase 3 (Complex I) protein is represented by a sequence which comprises the sequence shown in SEQ ID NO: 6.
9. The protein microarray of claim 1, wherein the 24-kD subunit of Complex 1 is represented by a sequence which comprises a protein encoded by the sequence shown in SEQ ID NO: 7.
10. The protein microarray of claim 1, wherein the mitotic kinesin-like protein-1 is represented by a sequence which comprises the sequence shown in SEQ ID NO: 9.
11. The protein microarray of claim 1, wherein the thromboxane synthase protein is represented by a sequence which comprises the sequence shown in SEQ ID NO: 11.
12. The protein microarray of claim 1, wherein the uncoupling protein homolog is represented by a sequence which comprises the sequence shown in SEQ ID NO: 13.
13. A method of screening for rheumatoid arthritis in a mammal comprising:

contacting a sample from said mammal to an immobilized polypeptide or fragment thereof homologous to at least a portion of at least one protein selected from the group consisting of L35 protein, eukaryotic translation elongation factor 1  $\alpha$ -2; NADH dehydrogenase 3 (complex I), 24-kDa subunit of complex I, mitotic kinesin-like protein-1, thromboxane synthase, and uncoupling protein homolog; and

detecting binding of an antibody from said sample to said immobilized polypeptide or fragment thereof.

14. The method of claim 13, wherein the polypeptide or fragment thereof is immobilized on a microarray.

15. The method of claim 13, wherein the proteins are His-tagged.

16. The method of claim 13, wherein the proteins are printed on a charged nickel slide.

17. A method of treating rheumatoid arthritis in a mammal comprising administering to said mammal a composition comprising a polypeptide or fragment thereof homologous to at least a portion of at least one protein selected from the group consisting of L35 protein, eukaryotic translation elongation factor 1  $\alpha$ -2; NADH dehydrogenase 3 (complex I), 24-kDa subunit of complex I, mitotic kinesin-like protein-1, thromboxane synthase, and uncoupling protein homolog, said polypeptide or fragment thereof being administered in an amount sufficient to interfere with the binding of an antibody from said mammal.

18. A kit for screening for Rheumatoid Arthritis in a mammal, comprising a mitochondrial marker, homolog or fragment thereof, selected from the group consisting of L35 protein, eukaryotic translation elongation factor 1  $\alpha$ -2, NADH dehydrogenase 3 (complex I), 24-kDa subunit of complex I, mitotic kinesin-like protein-1, thromboxane synthase, and uncoupling protein homolog.

19. The kit of Claim 18, wherein said mitochondrial marker, homolog or fragment thereof is immobilized on a rigid white substrate.

20. The kit of Claim 18, wherein said mitochondrial marker, homolog or fragment thereof is immobilized on a hydrophobic substrate.